

**What is claimed is:**

1           1. Apparatus for use in a wireless communications mobile unit comprising:  
2           a generator for generating a control channel including a prescribed control  
3 channel resource, said control channel being dedicated exclusively to a particular mobile  
4 unit and having a prescribed portion of said control channel resource reserved to transport  
5 uplink traffic channel requests; and

6           a transmitter for transmitting said uplink traffic channel requests in said  
7 prescribed portion of said control channel resource to a base station;

8           wherein said particular mobile unit and said base station a priori know the  
9 location of said prescribed portion of said control channel resource in said control  
10 channel, whereby a need to include control header information with said uplink traffic  
11 channel requests is eliminated.

1           2. The apparatus as defined in claim 1 wherein said wireless communications  
2 mobile unit is for use in an orthogonal frequency division multiplex multiple access  
3 wireless communication system.

1           3. The apparatus as defined in claim 1 further including a receiver for receiving a  
2 response including an uplink traffic channel assignment from said base station.

1           4. The apparatus as defined in claim 3 wherein said prescribed portion of said  
2 control channel resource includes a plurality of time slots, and wherein said transmitter is  
3 controlled to persistently transmit said uplink traffic channel request in prescribed ones of  
4 said plurality of time slots prior to said receiver receiving a response from said base  
5 station.

1           5. The apparatus as defined in claim 1 wherein said prescribed portion of said  
2 control channel resource includes a plurality of time slots, each of said time slots  
3 including a set of contiguous bit positions.

1           6. The apparatus as defined in claim 5 wherein said transmitter is controlled to  
2 persistently transmit said uplink traffic channel request in prescribed ones of said  
3 plurality of time slots.

1           7. The apparatus as defined in claim 1 wherein said prescribed portion of said  
2 control channel resource includes at least one time slot.

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1           8. The apparatus as defined in claim 7 wherein said uplink traffic channel request  
2 includes a request for a traffic channel in terms of a rate of transmission of data.

1           9. The apparatus as defined in claim 7 wherein said uplink traffic channel request  
2 includes a request for a traffic channel in terms of a number of frames required for the  
3 transmission of data.

1           10. The apparatus as defined in claim 7 wherein said uplink traffic channel  
2 request includes priority information regarding said mobile unit.

1           11. The apparatus as defined in claim 5 wherein said transmitter is controlled to  
2 transmit a single uplink traffic channel request utilizing a prescribed group of said  
3 plurality of time slots.

1           12. Apparatus for use in a wireless communications base station comprising:  
2 a receiver for monitoring at least one prescribed portion of a control channel  
3 resource of an incoming control channel to detect an incoming uplink traffic channel  
4 request from at least one mobile unit to which said at least one prescribed portion of said  
5 control channel resource is dedicated;

6 a detector for determining whether any uplink traffic channel requests have been  
7 received and, when an uplink traffic channel request has been detected, assigning a traffic  
8 channel to said at least one requesting mobile unit; and

9 a transmitter responsive to a determination that at least one request has been  
10 received for transmitting a request response message including said traffic channel  
11 assignment to said at least one requesting mobile unit.

1           13. The apparatus as defined in claim 12 wherein said wireless communications  
2 base station is for use in an orthogonal frequency division multiplex multiple access  
3 wireless communication system.

1           14. The apparatus as defined in claim 12 wherein said request response message  
2 includes a traffic channel assignment for said at least one mobile unit.

1           15. The apparatus as defined in claim 12 wherein said receiver receives a traffic  
2 channel request persistently transmitted by said at least one mobile unit.

1           16. The apparatus as defined in claim 15 wherein said base station utilizes said  
2 persistently received traffic channel request to determine the true value of said received  
3 traffic channel request in accordance with prescribed criteria.

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14 a receiver for monitoring at least one prescribed portion of a control  
15 channel resource of an incoming control channel to detect an incoming uplink  
16 traffic channel request from at least one mobile unit to which said at least one  
17 prescribed portion of said control channel resource is dedicated,

18 a detector for determining whether any uplink traffic channel requests  
19 have been received and, when an uplink traffic channel request has been detected,  
20 assigning a traffic channel to said at least one requesting mobile unit, and

21 a transmitter responsive to a determination that at least one request has  
22 been received for transmitting a request response message including said traffic  
23 channel assignment to said at least one requesting mobile unit.

1 22. The system as defined in claim 21 wherein said wireless mobile  
2 communication system is an orthogonal frequency division multiplex multiple access  
3 wireless mobile communication system.

1 23. Apparatus for use in a wireless communications mobile unit comprising:  
2 means for generating a control channel including a prescribed control channel  
3 resource, said control channel being dedicated exclusively to a particular mobile unit and  
4 having a prescribed portion of said control channel resource reserved to transport uplink  
5 traffic channel requests; and

6 means for transmitting said uplink traffic channel requests in said prescribed  
7 portion of said control channel resource to a base station;

8 wherein said particular mobile unit and said base station a priori know the  
9 location of said prescribed portion of said control channel resource in said control  
10 channel, whereby a need to include control header information with said uplink traffic  
11 channel requests is eliminated.

1 24. The apparatus as defined in claim 23 further including means for receiving a  
2 response including an uplink traffic channel assignment from said base station.

1 25. The apparatus as defined in claim 24 wherein said prescribed portion of said  
2 control channel resource includes a plurality of time slots, and wherein said means for  
3 transmitting includes means for controlling said means for transmitting to persistently  
4 transmit said uplink traffic channel request in prescribed ones of said plurality of time  
5 slots prior to said receiver receiving a response from said base station.

1 26. The apparatus as defined in claim 23 wherein said prescribed portion of said  
2 control channel resource includes a plurality of time slots.

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1           27. The apparatus as defined in claim 26 wherein said means for transmitting  
2 includes means for controlling said means for transmitting to persistently transmit said  
3 uplink traffic channel request in prescribed ones of said plurality of time slots.

1           28. Apparatus for use in a wireless communications base station comprising:  
2           receiver means for monitoring at least one prescribed portion of a control channel  
3 resource of an incoming control channel to detect an incoming uplink traffic channel  
4 request from at least one mobile unit to which said at least one prescribed portion of said  
5 control channel resource is dedicated;

6           means for determining whether any uplink traffic channel requests have been  
7 received and, when an uplink traffic channel request has been detected, assigning a traffic  
8 channel to said at least one requesting mobile unit; and

9           means responsive to a determination that at least one request has been received  
10 for transmitting a request response message including said traffic channel assignment to  
11 said at least one requesting mobile unit.

1           29. The apparatus as defined in claim 28 wherein said request response message  
2 includes a traffic channel assignment for said at least one mobile unit.

1           30. The apparatus as defined in claim 28 wherein said receiver receives a traffic  
2 channel request persistently transmitted by said at least one mobile unit.

1           31. The apparatus as defined in claim 30 wherein said base station utilizes said  
2 persistently received traffic channel request to determine the true value of said received  
3 traffic channel request in accordance with prescribed criteria.

1           32. The apparatus as defined in claim 31 wherein said true value of said traffic  
2 channel request is utilized to generate a traffic channel assignment for said at least one  
3 mobile unit that transmitted the traffic channel request.

1           33. A method for use in a wireless communications mobile unit comprising the  
2 steps of:

3           generating a control channel including a prescribed control channel resource, said  
4 control channel being dedicated exclusively to a particular mobile unit and having a  
5 prescribed portion of said control channel resource reserved to transport uplink traffic  
6 channel requests; and

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9 wherein said particular mobile unit and said base station a priori know the  
10 location of said prescribed portion of said control channel resource in said control  
11 channel, whereby a need to include control header information with said uplink traffic  
12 channel requests is eliminated.

35. The method as defined in claim 33 further including means for receiving a  
response including an uplink traffic channel assignment from said base station.

37. The method as defined in claim 33 wherein said prescribed portion of said control channel resource includes a plurality of time slots.

1           39. A method for use in a wireless communications base station comprising the  
2    steps of:

7           determining whether any uplink traffic channel requests have been received and,  
8   if an uplink traffic channel request has been detected, assigning a traffic channel to said at  
9   least one requesting mobile unit; and

10 in response to a determination that at least one request has been received,  
11 transmitting a request response message including said traffic channel assignment to said  
12 at least one requesting mobile unit.

1 40. The method as defined in claim 39 wherein said wireless communications  
2 base station is for use in an orthogonal frequency division multiplex multiple access  
3 wireless communication system.

1 41. The method as defined in claim 39 wherein said request response message  
2 includes a traffic channel assignment for said at least one mobile unit.

1 42. The method as defined in claim 39 wherein said step of monitoring includes a  
2 step of receiving a traffic channel request persistently transmitted by said at least one  
3 mobile unit.

1 43. The method as defined in claim 42 including a step of utilizing said  
2 persistently received traffic channel request to determine the true value of said received  
3 traffic channel request in accordance with prescribed criteria.

1 44. The method as defined in claim 43 including a step of utilizing said true value  
2 of said traffic channel request to generate a traffic channel assignment for said at least  
3 one mobile unit that transmitted the traffic channel request.

1 45. A method for use in a wireless mobile communication system including a  
2 plurality of mobile units and at least one base station comprising the steps of:

3 each of said mobile units

4 generating a control channel including a prescribed control channel  
5 resource, said control channel being dedicated exclusively to a particular mobile  
6 unit and having a prescribed portion of said control channel resource reserved to  
7 transport uplink traffic channel requests, and

8 transmitting said uplink traffic channel requests in said prescribed portion  
9 of said control channel resource to a base station,

10 wherein said particular mobile unit and said base station a priori know the  
11 location of said prescribed portion of said control channel resource in said control  
12 channel, whereby a need to include control header information with said uplink  
13 traffic channel requests is eliminated; and  
14 said at one base station

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15 monitoring at least one prescribed portion of a control channel resource of  
16 an incoming control channel to detect an incoming uplink traffic channel request  
17 from at least one mobile unit to which said at least one prescribed portion of said  
18 control channel resource is dedicated,

19 determining whether any uplink traffic channel requests have been  
20 received and, if an uplink traffic channel request has been detected, assigning a  
21 traffic channel to said at least one requesting mobile unit, and

22 in responsive to a determination that at least one request has been  
23 received, transmitting a request response message including said traffic channel  
24 assignment to said at least one requesting mobile unit.

1 46. The system as defined in claim 45 wherein said wireless mobile  
2 communication system is an orthogonal frequency division multiplex multiple access  
3 wireless mobile communication system.

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